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Title : Variation in sea ice cover on the east coast of Canada, 1969 to 2002: Implications for pagophilic seals

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Abstract : There is growing evidence that climate change may be affecting the quality, quantity and distribution of sea ice in northern Canada. Recent qualitative observations suggest that seasonal ice coverage on the east coast of Canada may be in decline. Such changes could have serious consequences for harp (*Pagophilus groenlandicus*) and hooded seals (*Cystophora cristata*) which congregate on ice every February and March in the Gulf of St. Lawrence and off Newfoundland to reproduce and nurse their pups. We combined a numerical statistical analysis of weekly averages of ice data with a spatial analysis of the same data to examine the spatio-temporal variability of ice cover during February and March, 1969 to 2002. Our results indicate that ice cover on the east coast has varied significantly during the study period, ending with an extended decline. In six of the past seven years, ice cover was significantly below the seasonal average. In recent poor ice years, ice cover in some regions was up to 60% less than the yearly average for the same period. Such reductions in ice cover may have deleterious effects on the reproductive success of pagophilic seals and should be accounted for in management plans for commercially exploited species.